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ACCEPTANCE OF ARTIFICIAL DIET BY  
*MEGATHYMUS STRECKERI* (SKINNER)  
(MEGATHYMIDAE)<sup>1 2</sup>

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WIELGUS AND WIELGUS (1972) DESCRIBED some techniques and problems involved in rearing several species of *Megathymus*. They found that the acquisition and preservation of food plants were particularly critical because *Megathymus* larvae are host specific; that is, they feed on *Yucca* spp. Therefore, we investigated method of introduction and acceptance of an artificial medium for *M. streckeri*.

The diet that was adopted is a modification of that described by Henneberry and Kishaba (1966) which is commonly used at Mesa, Arizona, for rearing the cabbage looper, *Trichoplusia ni* (Hubner). The following ingredients are used to prepare a 1-gal. batch (cost ca. \$2.70): 2500 ml H<sub>2</sub>O, 90 g agar, 129 g casein, 54 g alfalfa meal (autoclaved to prevent possible bacterial contamination), 18 ml 4M potassium hydroxide solution, 129 g sugar, 108 g wheat germ, 36 g Wesson<sup>®</sup> salt, 18 g alphacel, 36 ml (10% aqueous) choline chloride, 15 ml 27% formalin (10% formaldehyde gas in water), 20.6 ml each of 38% solutions of sorbic acid and methyl p-hydroxybenzoate in 95% ethanol, 15 g ascorbic acid and 0.5 g Aureomycin (chlortetracycline) suspended in 33.3 ml H<sub>2</sub>O, and 12 ml vitamin solution (made from 2400 mg each niacin and calcium pantothenate; 1200 mg riboflavin; 600 mg each thiamin, pyridoxin, and folic acid; 48 mg biotin; and 4800 mg (0.1%) vitamin B<sub>12</sub> suspended in 400 ml H<sub>2</sub>O).

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Immediately after the hot liquid diet is prepared it is poured into a mold made of a 7.62-cm diam. plexiglass tube at least 12.7 cm long, and allowed to solidify at 23°C. Then a 12.7-cm-long section of diet is removed from the mold and placed in a polyethylene sandwich bag, the bag sealed to slow the loss of moisture, is inverted and supported upright by placing it in a pint glass jar. In the first trials, a 10-mm hole was cut in the top of the bag, a paper "tent" (Wielgus and Wielgus, 1972), was set ca. 6.5 mm into the diet, and a larva was placed inside the tent and allowed to make its own way. However, establishment did not occur within 24 hr. Therefore, in the second attempt (same larva), the tent was placed around a slice of yucca caudex pulp (25.4 mm long with a triangular top 3.2 mm on a side), and the slice was inserted into the diet so the broad end was flush with the surface of the medium. Juice from the diet was soaked up by the paper. It probably also soaked into the pulp making it the initial point of introduction of diet to the larva.

Larval feeding on the pulp slice produced a pebbly, cream-colored frass; larval feeding on diet produced a fine textured, brownish-colored frass.

After the demonstration of acceptance, three *M. streckeri* reared from eggs (2 collected 15 mi. S.W. of Winslow, Arizona, and one collected in the Sandia Mountains, New Mexico) on yucca caudices were transferred to the diet, two as 3rd-instar larvae and one as a 4th-instar larvae. Throughout the tests temperature and relative humidity were maintained at 25.6°C and 40%, respectively.

The acceptance of the artificial diet by *M. streckeri* reduces the cost of rearing the insect and also makes it possible to rear the insect when one is not located near natural food sources.

## REFERENCES

- HENNEBERRY, T. J., and A. N. KISHABA. 1966. Mass rearing cabbage loopers, p. 461-78. In C. N. Smith (ed.) *Insect Colonization and Mass Production*. Academic Press, New York. 618 p.
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